

L_Number	Hits	Search Text	DB	Time stamp
1	97	(5274572, 5542024, 5561760, 5673369, 5819248, 4803641, 4920499, 4965742, 5182793, 5263126, 5295230, 5307446, 5317677, 5333237, 5337320, 5388189, 5493729, 5566092, 5617514, 5630025, 5696884, 5704018, 6098061, 6240329, 4763277, 4783752, 4809219, 4816994, 4847784, 4866634, 4870591, 4872122, 4884218, 4916633, 4918620, 4922432, 4931951, 4939668, 4949278, 4967368, 5005143, 5019992, 5067099, 5197016, 5253184, 5283895, 5301260, 5301314, 5353384, "5394543").pn.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/02 18:43
2	97	(5274572, 5542024, 5561760, 5673369, 5819248, 4803641, 4920499, 4965742, 5182793, 5263126, 5295230, 5307446, 5317677, 5333237, 5337320, 5388189, 5493729, 5566092, 5617514, 5630025, 5696884, 5704018, 6098061, 6240329, 4763277, 4783752, 4809219, 4816994, 4847784, 4866634, 4870591, 4872122, 4884218, 4916633, 4918620, 4922432, 4931951, 4939668, 4949278, 4967368, 5005143, 5019992, 5067099, 5197016, 5253184, 5283895, 5301260, 5301314, 5353384, "5394543").pn.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/02 18:43
3	50	(5274572, 5542024, 5561760, 5673369, 5819248, 4803641, 4920499, 4965742, 5182793, 5263126, 5295230, 5307446, 5317677, 5333237, 5337320, 5388189, 5493729, 5566092, 5617514, 5630025, 5696884, 5704018, 6098061, 6240329, 4763277, 4783752, 4809219, 4816994, 4847784, 4866634, 4870591, 4872122, 4884218, 4916633, 4918620, 4922432, 4931951, 4939668, 4949278, 4967368, 5005143, 5019992, 5067099, 5197016, 5253184, 5283895, 5301260, 5301314, 5353384, "5394543").pn.	USPAT	2004/03/02 18:43
4	1	(4622013, 4874784, 4981766, 4931950, 4964077, 4977529, 5002491, 5170464, 5189402, 5208745, 5208898, 5239617, 5259766, 5267865, 5310349, 5311422, 5317688, 5326270, 5359701, 5372507, 5395243, 5441415, 5491743, 5533903, 5535422, 5537141, 5539869, 5566291, 5576844, 5577186, 5597312, 5616033, 5644686, 5644727, 5673369, 5690496, 5696885, 5701400, 5720007, 5727161, 5727950, 5745652, 5772446, 5779468, 5788508, 5791907, 5799151, 5799292, 5806056, 5810747, 5822745, 5823781, 5823788, 5835683, 5868575, 5870768, 5875437, 5889845, 5893123, 5911581, 5974446, 5987443, 6003021, 6015348, 6016486, 6018730, 6018731, 6018732, 6023691, 6023692, 6026386, 6029156, 6029158, 6029159, 6032141, 6064998, 6067537, 6067538, 6073127, 6085184, 6101489, 6125358, "6134539").pn. and ((5274572, 5542024, 5561760, 5673369, 5819248, 4803641, 4920499, 4965742, 5182793, 5263126, 5295230, 5307446, 5317677, 5333237, 5337320, 5388189, 5493729, 5566092, 5617514, 5630025, 5696884, 5704018, 6098061, 6240329, 4763277, 4783752, 4809219, 4816994, 4847784, 4866634, 4870591, 4872122, 4884218, 4916633, 4918620, 4922432, 4931951, 4939668, 4949278, 4967368, 5005143, 5019992, 5067099, 5197016, 5253184, 5283895, 5301260, 5301314, 5353384, "5394543").pn.)	USPAT	2004/03/02 18:43
5	49	expert adj system\$1 and ((5274572, 5542024, 5561760, 5673369, 5819248, 4803641, 4920499, 4965742, 5182793, 5263126, 5295230, 5307446, 5317677, 5333237, 5337320, 5388189, 5493729, 5566092, 5617514, 5630025, 5696884, 5704018, 6098061, 6240329, 4763277, 4783752, 4809219, 4816994, 4847784, 4866634, 4870591, 4872122, 4884218, 4916633, 4918620, 4922432, 4931951, 4939668, 4949278, 4967368, 5005143, 5019992, 5067099, 5197016, 5253184, 5283895, 5301260, 5301314, 5353384, "5394543").pn.)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/02 18:44

6	130	706/59.ccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/02 18:47
7	220	706/50.ccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/02 18:47
8	216	706/11.ccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/02 18:47
9	336	706/46.ccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/02 18:47
10	9	(expert adj system\$1 and ((5274572, 5542024, 5561760, 5673369, 5819248, 4803641, 4920499, 4965742, 5182793, 5263126, 5295230, 5307446, 5317677, 5333237, 5337320, 5388189, 5493729, 5566092, 5617514, 5630025, 5696884, 5704018, 6098061, 6240329, 4763277, 4783752, 4809219, 4816994, 4847784, 4866634, 4870591, 4872122, 4884218, 4916633, 4918620, 4922432, 4931951, 4939668, 4949278, 4967368, 5005143, 5019992, 5067099, 5197016, 5253184, 5283895, 5301260, 5301314, 5353384, "5394543").pn.)) and 706/59.ccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/02 18:49
11	8	(expert adj system\$1 and ((5274572, 5542024, 5561760, 5673369, 5819248, 4803641, 4920499, 4965742, 5182793, 5263126, 5295230, 5307446, 5317677, 5333237, 5337320, 5388189, 5493729, 5566092, 5617514, 5630025, 5696884, 5704018, 6098061, 6240329, 4763277, 4783752, 4809219, 4816994, 4847784, 4866634, 4870591, 4872122, 4884218, 4916633, 4918620, 4922432, 4931951, 4939668, 4949278, 4967368, 5005143, 5019992, 5067099, 5197016, 5253184, 5283895, 5301260, 5301314, 5353384, "5394543").pn.)) and 706/50.ccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/02 18:49
12	7	(expert adj system\$1 and ((5274572, 5542024, 5561760, 5673369, 5819248, 4803641, 4920499, 4965742, 5182793, 5263126, 5295230, 5307446, 5317677, 5333237, 5337320, 5388189, 5493729, 5566092, 5617514, 5630025, 5696884, 5704018, 6098061, 6240329, 4763277, 4783752, 4809219, 4816994, 4847784, 4866634, 4870591, 4872122, 4884218, 4916633, 4918620, 4922432, 4931951, 4939668, 4949278, 4967368, 5005143, 5019992, 5067099, 5197016, 5253184, 5283895, 5301260, 5301314, 5353384, "5394543").pn.)) and 706/11.ccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/02 18:49
13	7	(expert adj system\$1 and ((5274572, 5542024, 5561760, 5673369, 5819248, 4803641, 4920499, 4965742, 5182793, 5263126, 5295230, 5307446, 5317677, 5333237, 5337320, 5388189, 5493729, 5566092, 5617514, 5630025, 5696884, 5704018, 6098061, 6240329, 4763277, 4783752, 4809219, 4816994, 4847784, 4866634, 4870591, 4872122, 4884218, 4916633, 4918620, 4922432, 4931951, 4939668, 4949278, 4967368, 5005143, 5019992, 5067099, 5197016, 5253184, 5283895, 5301260, 5301314, 5353384, "5394543").pn.)) and 706/46.ccls.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/02 18:49

14	0	(5987443, 6003021, 6134539, 6067537, 6032141, 6535861, 6073127, 6023691, 6101489, 6026386, 6067538, 6542880, 6085184, 6016486, 6023692, 6029158, 6029156, 6018732, 6018731, 6125358, 6064998, 6018730, 6029159, 6622003, 6591256, 6282362, d372435, 6658398, 6549893, 6493690, 6452070, 6284947, 20020035478, 20010016839, 20030172082, 20020171982, 20030163361, 20030041040, 20020090595, 20020067822, 20030106040, 20020161777, 20030093831, 20030041343, 5694601, 5701400, 5827070, wo-9744766-a1, wo-9832109-a1).did. and ((5274572, 5542024, 5561760, 5673369, 5819248, 4803641, 4920499, 4965742, 5182793, 5263126, 5295230, 5307446, 5317677, 5333237, 5337320, 5388189, 5493729, 5566092, 5617514, 5630025, 5696884, 5704018, 6098061, 6240329, 4763277, 4783752, 4809219, 4816994, 4847784, 4866634, 4870591, 4872122, 4884218, 4916633, 4918620, 4922432, 4931951, 4939668, 4949278, 4967368, 5005143, 5019992, 5067099, 5197016, 5253184, 5283895, 5301260, 5301314, 5353384, "5394543").pn.)	USPAT; US-PGPUB; EPO	2004/03/02 19:09
83	0	(4622013, 4874784, 4981766, 4931950, 4964077, 4977529, 5002491, 5170464, 5189402, 5208745, 5208898, 5239617, 5259766, 5267865, 5310349, 5311422, 5317688, 5326270, 5359701, 5372507, 5395243, 5441415, 5491743, 5533903, 5535422, 5537141, 5539869, 5566291, 5576844, 5577186, 5597312, 5616033, 5644686, 5644727, 5673369, 5690496, 5696885, 5701400, 5720007, 5727161, 5727950, 5745652, 5772446, 5779468, 5788508, 5791907, 5799151, 5799292, 5806056, 5810747, 5822745, 5823781, 5823788, 5835683, 5868575, 5870768, 5875437, 5889845, 5893123, 5911581, 5974446, 5987443, 6003021, 6015348, 6016486, 6018730, 6018731, 6018732, 6023691, 6023692, 6026386, 6029156, 6029158, 6029159, 6032141, 6064998, 6067537, 6067538, 6073127, 6085184, 6101489, 6125358, "6134539").pn.	USPAT	2004/03/02 18:43
	0	(ep689132a2).did.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/02 13:46
	0	(ep689132a2).did.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/02 13:47
	2	(ep-689132-a2).did.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/02 13:47
	2	(ep-689132-a2).did.	EPO; DERWENT	2004/03/02 13:48
	1	(ep-689132-a2).did.	EPO	2004/03/02 13:49
	0	(ep-0689132-a2).did.	EPO	2004/03/02 13:55
	2	(ep-689132-a2, ep-710942-a2).did.	EPO	2004/03/02 13:50
	3	(ep-689132-a2, ep-710942-a2, ep-798655-a2).did.	EPO	2004/03/02 13:53
	3	(ep-689132-a2, ep-710942-a2, ep-798655-a2).did.	DERWENT	2004/03/02 14:39
	0	(ep-689132-a).did.	EPO	2004/03/02 13:55
	0	(wo-0004478).did.	DERWENT	2004/03/02 13:56
	0	(wo-0004478-a).did.	DERWENT	2004/03/02 13:56
	0	(wo-0004478-a1).did.	DERWENT	2004/03/02 13:57
	0	(wo-0004478-a2).did.	DERWENT	2004/03/02 13:57
	0	(wo-0004478-a2).did.	EPO; DERWENT	2004/03/02 13:57
	0	(wo-0004478-a1).did.	EPO	2004/03/02 13:58

	1	wo-9832109-a1.did.	EPO	2004/03/02 14:00
	1	wo-9832109-a1.did.	DERWENT	2004/03/02 13:58
	0	wo-9832109-a1.did.	USPAT; US-PGPUB; JPO; IBM_TDB	2004/03/02 13:58
	0	wo-0004478-a1.did.	EPO	2004/03/02 14:01
	1	wo-9744766-a1.did.	EPO	2004/03/02 14:00
	3	(wo-0004478-a1, wo-9744766-a1, wo-9803953-a1, wo-9825251-a1, wo-9832109-a1).did.	DERWENT	2004/03/02 14:09
	4	(wo-0004478-a2, wo-9744766-a1, wo-9803953-a2, wo-9825251-a1, wo-9832109-a1).did.	DERWENT	2004/03/02 14:10
	4	(wo-0004478-\$, wo-9744766-a1, wo-9803953-a2, wo-9825251-a1, wo-9832109-a1).did.	DERWENT	2004/03/02 14:10
	4	(wo-0004478-\$, wo-9744766-a1, wo-9803953-a2, wo-9825251-a1, wo-9832109-a1).did.	EPO	2004/03/02 14:39
	8	(wo-0004478-\$, wo-9744766-a1, wo-9803953-a2, wo-9825251-a1, wo-9832109-a1).did.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/02 16:04
	0	(wo-0004478-\$, wo-9744766-a1, wo-9803953-a2, wo-9825251-a1, wo-9832109-a1).did.	USOCR	2004/03/02 14:28
7932		expert adj system\$1	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/02 18:43
	49	(4622013, 4874784, 4981766, 4931950, 4964077, 4977529, 5002491, 5170464, 5189402, 5208745, 5208898, 5239617, 5259766, 5267865, 5310349, 5311422, 5317688, 5326270, 5359701, 5372507, 5395243, 5441415, 5491743, 5533903, 5535422, 5537141, 5539869, 5566291, 5576844, 5577186, 5597312, 5616033, 5644686, 5644727, 5673369, 5690496, 5696885, 5701400, 5720007, 5727161, 5727950, 5745652, 5772446, 5779468, 5788508, 5791907, 5799151, 5799292, 5806056, 5810747, 5822745, 5823781, 5823788, 5835683, 5868575, 5870768, 5875437, 5889845, 5893123, 5911581, 5974446, 5987443, 6003021, 6015348, 6016486, 6018730, 6018731, 6018732, 6023691, 6023692, 6026386, 6029156, 6029158, 6029159, 6032141, 6064998, 6067537, 6067538, 6073127, 6085184, 6101489, 6125358, "6134539").pn. and (expert adj system\$1)	USPAT	2004/03/02 14:39
	0	(ep-689132-a2, ep-710942-a2, ep-798655-a2).did. and (expert adj system\$1)	DERWENT	2004/03/02 14:39
	0	(wo-0004478-\$, wo-9744766-a1, wo-9803953-a2, wo-9825251-a1, wo-9832109-a1).did. and (expert adj system\$1)	EPO	2004/03/02 14:39
307	706/60		USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/02 14:40
	151	706/60.ccis.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/02 14:40
	643	706/45.ccis.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/02 18:47

	7	((4622013, 4874784, 4981766, 4931950, 4964077, 4977529, 5002491, 5170464, 5189402, 5208745, 5208898, 5239617, 5259766, 5267865, 5310349, 5311422, 5317688, 5326270, 5359701, 5372507, 5395243, 5441415, 5491743, 5533903, 5535422, 5537141, 5539869, 5566291, 5576844, 5577186, 5597312, 5616033, 5644686, 5644727, 5673369, 5690496, 5696885, 5701400, 5720007, 5727161, 5727950, 5745652, 5772446, 5779468, 5788508, 5791907, 5799151, 5799292, 5806056, 5810747, 5822745, 5823781, 5823788, 5835683, 5868575, 5870768, 5875437, 5889845, 5893123, 5911581, 5974446, 5987443, 6003021, 6015348, 6016486, 6018730, 6018731, 6018732, 6023691, 6023692, 6026386, 6029156, 6029158, 6029159, 6032141, 6064998, 6067537, 6067538, 6073127, 6085184, 6101489, 6125358, "6134539").pn. and (expert adj system\$1)) and 706/60.ccIs.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/02 14:41
	21	((4622013, 4874784, 4981766, 4931950, 4964077, 4977529, 5002491, 5170464, 5189402, 5208745, 5208898, 5239617, 5259766, 5267865, 5310349, 5311422, 5317688, 5326270, 5359701, 5372507, 5395243, 5441415, 5491743, 5533903, 5535422, 5537141, 5539869, 5566291, 5576844, 5577186, 5597312, 5616033, 5644686, 5644727, 5673369, 5690496, 5696885, 5701400, 5720007, 5727161, 5727950, 5745652, 5772446, 5779468, 5788508, 5791907, 5799151, 5799292, 5806056, 5810747, 5822745, 5823781, 5823788, 5835683, 5868575, 5870768, 5875437, 5889845, 5893123, 5911581, 5974446, 5987443, 6003021, 6015348, 6016486, 6018730, 6018731, 6018732, 6023691, 6023692, 6026386, 6029156, 6029158, 6029159, 6032141, 6064998, 6067537, 6067538, 6073127, 6085184, 6101489, 6125358, "6134539").pn. and (expert adj system\$1)) and 706/60.ccIs.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/02 14:42
	3	(((4622013, 4874784, 4981766, 4931950, 4964077, 4977529, 5002491, 5170464, 5189402, 5208745, 5208898, 5239617, 5259766, 5267865, 5310349, 5311422, 5317688, 5326270, 5359701, 5372507, 5395243, 5441415, 5491743, 5533903, 5535422, 5537141, 5539869, 5566291, 5576844, 5577186, 5597312, 5616033, 5644686, 5644727, 5673369, 5690496, 5696885, 5701400, 5720007, 5727161, 5727950, 5745652, 5772446, 5779468, 5788508, 5791907, 5799151, 5799292, 5806056, 5810747, 5822745, 5823781, 5823788, 5835683, 5868575, 5870768, 5875437, 5889845, 5893123, 5911581, 5974446, 5987443, 6003021, 6015348, 6016486, 6018730, 6018731, 6018732, 6023691, 6023692, 6026386, 6029156, 6029158, 6029159, 6032141, 6064998, 6067537, 6067538, 6073127, 6085184, 6101489, 6125358, "6134539").pn. and (expert adj system\$1)) and 706/60.ccIs.) and (((4622013, 4874784, 4981766, 4931950, 4964077, 4977529, 5002491, 5170464, 5189402, 5208745, 5208898, 5239617, 5259766, 5267865, 5310349, 5311422, 5317688, 5326270, 5359701, 5372507, 5395243, 5441415, 5491743, 5533903, 5535422, 5537141, 5539869, 5566291, 5576844, 5577186, 5597312, 5616033, 5644686, 5644727, 5673369, 5690496, 5696885, 5701400, 5720007, 5727161, 5727950, 5745652, 5772446, 5779468, 5788508, 5791907, 5799151, 5799292, 5806056, 5810747, 5822745, 5823781, 5823788, 5835683, 5868575, 5870768, 5875437, 5889845, 5893123, 5911581, 5974446, 5987443, 6003021, 6015348, 6016486, 6018730, 6018731, 6018732, 6023691, 6023692, 6026386, 6029156, 6029158, 6029159, 6032141, 6064998, 6067537, 6067538, 6073127, 6085184, 6101489, 6125358, "6134539").pn. and (expert adj system\$1)) and 706/45.ccIs.)	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/02 16:44

	2	5694601.did.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/02 16:01
	1	("5694601").did.	DERWENT	2004/03/02 16:02
	86	(5987443, 6003021, 6134539, 6067537, 6032141, 6535861, 6073127, 6023691, 6101489, 6026386, 6067538, 6542880, 6085184, 6016486, 6023692, 6029158, 6029156, 6018732, 6018731, 6125358, 6064998, 6018730, 6029159, 6622003, 6591256, 6282362, d372435, 6658398, 6549893, 6493690, 6452070, 6284947, 20020035478, 20010016839, 20030172082, 20020171982, 20030163361, 20030041040, 20020090595, 20020067822, 20030106040, 20020161777, 20030093831, 20030041343, wo-9744766-a1, wo-9832109-a1).did.	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2004/03/02 16:20
	84	(5987443, 6003021, 6134539, 6067537, 6032141, 6535861, 6073127, 6023691, 6101489, 6026386, 6067538, 6542880, 6085184, 6016486, 6023692, 6029158, 6029156, 6018732, 6018731, 6125358, 6064998, 6018730, 6029159, 6622003, 6591256, 6282362, d372435, 6658398, 6549893, 6493690, 6452070, 6284947, 20020035478, 20010016839, 20030172082, 20020171982, 20030163361, 20030041040, 20020090595, 20020067822, 20030106040, 20020161777, 20030093831, 20030041343, wo-9744766-a1, wo-9832109-a1).did.	USPAT; US-PGPUB; DERWENT	2004/03/02 16:18
	46	(5987443, 6003021, 6134539, 6067537, 6032141, 6535861, 6073127, 6023691, 6101489, 6026386, 6067538, 6542880, 6085184, 6016486, 6023692, 6029158, 6029156, 6018732, 6018731, 6125358, 6064998, 6018730, 6029159, 6622003, 6591256, 6282362, d372435, 6658398, 6549893, 6493690, 6452070, 6284947, 20020035478, 20010016839, 20030172082, 20020171982, 20030163361, 20030041040, 20020090595, 20020067822, 20030106040, 20020161777, 20030093831, 20030041343, wo-9744766-a1, wo-9832109-a1).did.	USPAT; US-PGPUB; EPO	2004/03/02 16:37
	0	((5987443, 6003021, 6134539, 6067537, 6032141, 6535861, 6073127, 6023691, 6101489, 6026386, 6067538, 6542880, 6085184, 6016486, 6023692, 6029158, 6029156, 6018732, 6018731, 6125358, 6064998, 6018730, 6029159, 6622003, 6591256, 6282362, d372435, 6658398, 6549893, 6493690, 6452070, 6284947, 20020035478, 20010016839, 20030172082, 20020171982, 20030163361, 20030041040, 20020090595, 20020067822, 20030106040, 20020161777, 20030093831, 20030041343, wo-9744766-a1, wo-9832109-a1).did.) not ((5987443, 6003021, 6134539, 6067537, 6032141, 6535861, 6073127, 6023691, 6101489, 6026386, 6067538, 6542880, 6085184, 6016486, 6023692, 6029158, 6029156, 6018732, 6018731, 6125358, 6064998, 6018730, 6029159, 6622003, 6591256, 6282362, d372435, 6658398, 6549893, 6493690, 6452070, 6284947, 20020035478, 20010016839, 20030172082, 20020171982, 20030163361, 20030041040, 20020090595, 20020067822, 20030106040, 20020161777, 20030093831, 20030041343, wo-9744766-a1, wo-9832109-a1).did.)	USPAT; US-PGPUB; EPO	2004/03/02 16:21

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**Results 1 - 19 of 19** short listing

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**1** Efficient debugging primitives for multiprocessors 84%



Z. Aral , I. Gerther , G. Schaffer  
**ACM SIGARCH Computer Architecture News , Proceedings of the third international conference on Architectural support for programming languages and operating systems** April 1989

Volume 17 Issue 2

Existing kernel-level debugging primitives are inappropriate for instrumenting complex sequential or parallel programs. These functions incur a heavy overhead in their use of system calls and process switches. Context switches are used to alternately invoke the debugger and the target programs. System calls are used to communicate data between the target and debugger. None of this is necessary in shared-memory multiprocessors. Multiple processors concurrently run both the debugger ...

**2** DDD—a free graphical front-end for UNIX debuggers 82%



Andreas Zeller , Dorothea Lütkehaus  
**ACM SIGPLAN Notices** January 1996

Volume 31 Issue 1

The Data Display Debugger (DDD) is a novel graphical user interface to GDB and DBX, the popular UNIX debuggers. Besides "usual" features such as viewing source texts and breakpoints, DDD provides a *graphical data display*, where data structures are displayed as graphs. A simple mouse click dereferences pointers or reveals structure contents. Complex data structures can be explored incrementally and interactively, using automatic layout if preferred. Each time the program stops, the data di ...

**3** Generating wrappers for command line programs: the Cal-Aggie Wrap- 80%



O-Matic project

Eric Wohlstadter , Stoney Jackson , Premkumar Devanbu  
**Proceedings of the 23rd international conference on Software engineering** July 2001

*Software developers writing new software have strong incentives to make their products compliant to standards such as CORBA, COM, and Java Beans. Standards-compliance facilitates inter-operability, component-based software assembly, and software reuse, thus leading to improved quality and productivity. Legacy software, on the other hand, is usually monolithic, and hard to maintain and adapt. Many organizations, saddled with entrenched legacy software, are confronted with the need to ...*

4 A generic tool set for application specific processor architectures 80%



Frank Engel , Johannes Nührenberg , Gerhard P. Fettweis

**Proceedings of the eighth international workshop on Hardware/software codesign** May 2000

Retargetability allows an easy adoption of a simulator on different processor architectures without a time consuming redesign of all tools. This is evident for an efficient HW/SW codesign. In this paper we describe a tool set for fast and easy simulation of processor architectures based on a retargetable simulator core. This approach helps to reduce the development time for designing and validating System-on-a-chip (SoC) applications based on a processor core. The use of ANSIC avo ...

5 Yesterday, my program worked. Today, it does not. Why? 80%



Andreas Zeller  
**ACM SIGSOFT Software Engineering Notes , Proceedings of the 7th European engineering conference held jointly with the 7th ACM SIGSOFT international symposium on Foundations of software engineering** October 1999

Volume 24 Issue 6

Imagine some program and a number of changes. If none of these changes is applied ("yesterday"), the program works. If all changes are applied ("today"), the program does not work. Which change is responsible for the failure? We present an efficient algorithm that determines the minimal set of failure-inducing changes. Our delta debugging prototype tracked down a single failure-inducing change from 178,000 changed GDB lines within a few hours.

6 Linux Apprentice: DDD---The Data Display Debugger. 80%



Shay Rojansky  
**Linux Journal** October 1997

7 Query-based debugging of object-oriented programs 80%



Raimondas Lencevicius , Urs Hözle , Ambuj K. Singh

**ACM SIGPLAN Notices , Proceedings of the 12th ACM SIGPLAN conference on Object-oriented programming, systems, languages, and applications** October 1997

Volume 32 Issue 10

Object relationships in modern software systems are becoming increasingly numerous and complex. Programmers who try to find violations of such relationships need new tools that allow them to explore objects in a large system more efficiently. Many existing debuggers present only a low-level, one-object-at-a-time view of objects and their relationships. We propose a new solution to overcome these problems: query-based debugging. The implementation of the query-based debugger described here offers ...

8 High-level debugging in parasight 77%



Ziya Aral , Ilya Gertner

**ACM SIGPLAN Notices , Proceedings of the 1988 ACM SIGPLAN and SIGOPS workshop on Parallel and distributed debugging November 1988**

Volume 24 Issue 1

Debugging parallel programs with time critical dependencies is difficult due to subtle race conditions that may cause deadlock, starvation, and other errors. These errors can be detected by multiple instrumentation points triggered by logical assertions. Although some advanced debuggers provide a programmer with the ability to define complex logical assertions, they are inadequate for debugging parallel programs due to the high overhead of monitoring these assertions. This paper ...

**9 Fast breakpoints: design and implementation**

77%

 Peter B. Kessler

**ACM SIGPLAN Notices , Proceedings of the ACM SIGPLAN 1990 conference on Programming language design and implementation June 1990**

Volume 25 Issue 6

We have designed and implemented a fast breakpoint facility. Breakpoints are usually thought of as a feature of an interactive debugger, in which case the breakpoints need not be particularly fast. In our environment breakpoints are often used for non-interactive information gathering; for example, procedure call count and statement execution count profiling [Swinehart, et al.]. When used non-interactively, breakpoints should be as fast as possible, so as to perturb the execution of the pro ...

**10 Parasight: a high-level debugger/profiler architecture for shared-**

77%

 memory multiprocessor

Z. Aral , Ilya Gertner

**Proceedings of the 2nd international conference on Supercomputing June 1988**

Existing debuggers and profilers are inadequate for debugging and profiling parallel programs. They are awkward in their handling of multiple threads of control and highly intrusive in their monitoring of program behavior. ParasightTM is an architecture that is geared towards non-intrusive high-level debugging and profiling. Parasight controls and observes the execution of parallel programs in terms of the set of abstractions that are being employed by the programmer. D ...

**11 The effect of instruction set complexity on program size and memory**

77%

 performance

Jack W. Davidson , Richard A. Vaughan

**Proceedings of the second international conference on Architectual support for programming languages and operating systems October 1987**

Volume 22 , 21 , 15 Issue 10 , 4 , 5

**12 Automated support for testing and debugging of real-time programs**

77%

 using oracles

Laura K. Dillon

**ACM SIGSOFT Software Engineering Notes January 2000**

Volume 25 Issue 1

**13 Framework for debugging domain-specific languages**

77%

 Premkumar Devanbu

**ACM SIGSOFT Software Engineering Notes January 2000**

Volume 25 Issue 1

**14** KDB: a multi-threaded debugger for multi-threaded applications 77%  
 Peter A. Buhr , Martin Karsten , Jun Shih  
**Proceedings of the SIGMETRICS symposium on Parallel and distributed tools**  
January 1996

**15** User interface prototyping—concepts, tools, and experience 77%  
 Dirk Bäumer , Walter R. Bischofberger , Horst Licher , Heinz Züllighoven  
**Proceedings of the 18th international conference on Software engineering** May 1996  
In recent years the development of highly interactive software systems with graphical user interfaces has become increasingly common. The acceptance of such a system depends to a large degree on the quality of its user interface. Prototyping is an excellent means for generating ideas about how a user interface can be designed, and it helps to evaluate the quality of a solution at an early stage. We present the basic concepts behind user interface prototyping, a classification of tools supporting ...

**16** Efficient data breakpoints 77%  
 Robert Wahbe  
**ACM SIGPLAN Notices , Proceedings of the fifth international conference on Architectural support for programming languages and operating systems**  
September 1992  
Volume 27 Issue 9

**17** An introductory course on the use of operating systems 77%  
 Catherine C. Bareiss  
**ACM SIGCSE Bulletin , Proceedings of the twenty-third SIGCSE technical symposium on Computer science education** March 1992  
Volume 24 Issue 1  
One very frustrating problem that students often have while working on computers is the lack of ability to do productive work. They often find themselves either not being able to do something or doing it in a very complex way when there is a simpler or shorter way to accomplish the task. This is a common experience because most students do not have a structured time of learning the operating system(s) on which they work. This often occurs because the use of an operating system is not consid ...

**18** A new approach to debugging optimized code 77%  
 Gary Brooks , Gilbert J. Hansen , Steve Simmons  
**ACM SIGPLAN Notices , Proceedings of the ACM SIGPLAN 1992 conference on Programming language design and implementation** July 1992  
Volume 27 Issue 7  
Debugging optimized code is a desirable capability not provided by most current debuggers. Users are forced to debug the unoptimized code when a bug occurs in the optimized version. Current research offers partial solutions for a small class of optimizations, but not a unified approach that handles a wide range of optimizations, such as the sophisticated optimizations performed by supercomputer compilers. The trend with current research is to make the effects of optimization tran ...

**19** Practical data breakpoints: design and implementation 77%  
 Robert Wahbe , Steven Lucco , Susan L. Graham  
**ACM SIGPLAN Notices , Proceedings of the ACM SIGPLAN 1993 conference on Programming language design and implementation** June 1993  
Volume 28 Issue 6

A data breakpoint associates debugging actions with programmer-specified conditions on the memory state of an executing program. Data breakpoints provide a means for discovering program bugs that are tedious or impossible to isolate using control breakpoints alone. In practice, programmers rarely use data breakpoints, because they are either unimplemented or prohibitively slow in available debugging software. In this paper, we present the design and implementation of a practical data breakp ...

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**Results 1 - 19 of 19** [short listing](#)

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